AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A computer-implemented method of discovering relationships between items, comprising:

accepting, in a computer, item selections <u>detected</u> from a plurality of

users, the item selection detections being based upon the detection

of implicit user behavior;

generating, in the computer, a log for each user, each log containing

identifiers for the user's <u>detected item selections, each of said user</u>

<u>logs being populated as a result of the acceptance of the detected</u>

item selections;

accepting, in the computer, a query including at least one query item

identifier;

scoring, in the computer, the user logs, <u>the scoring being</u> responsive to a

degree of occurrence of the at least one query item identifier in the

user logs, <u>so as</u> to generate user log scores <u>based exclusively on the</u>

<u>detected implicit user behavior;</u> and

determining, in the computer, at least one result item, responsive to a

degree of occurrence in at least a subset of the scored user logs.

1   2. (Original) The computer-implemented method of claim 1, wherein a

2   significance of the occurrence is determined by a log likelihood ratio analysis and the

3   determined result is responsive to the determined significance.

1   3. (Original) The computer-implemented method of claim 1, wherein a

2   significance of the occurrence is determined by a substantial equivalent of a log

3   likelihood ratio analysis and the determined result is responsive to the determined

4   significance.

1   4. (Original) The computer-implemented method of claim 1, wherein each item

2   is a video track and wherein accepting item selections comprises determining which

3   tracks are selected for playback.

1   5. (Original) The computer-implemented method of claim 1, wherein each item

2   is a music track and wherein accepting item selections comprises determining which

3   tracks are selected for playback.

1   6. (Previously presented) The computer-implemented method of claim 5,

2   further comprising:

3   generating, in the computer, a track list containing an identifier for each

4   determined result item comprising a music track.

1   7. (Previously presented) The computer-implemented method of claim 6,

2   further comprising:

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3   deleting, in the computer, from the track list at least one identifier

4   corresponding to a music track already selected by the user.

1   8. (Original) The computer-implemented method of claim 6, further comprising:

2   playing the music tracks specified by the generated track list.

1   9. (Previously presented) The computer-implemented method of claim 5,

2   further comprising:

3   accepting, in the computer, a format schedule specifying music track

4   categories for time periods; and

5   generating, in the computer, a track list conforming to the format schedule

6   and containing an identifier for each determined result item

7   comprising a music track.

1   10. (Original) The computer-implemented method of claim 5, wherein scoring

2   the user logs comprises determining a degree of occurrence in each user log of at least

3   one music track identified by the query item identifier.

1   11. (Original) The computer-implemented method of claim 5, wherein scoring

2   the user logs comprises determining a degree of occurrence in each user log of at least

3   one music track associated with an artist identified by the query item identifier.

1   12. (Original) The computer-implemented method of claim 1, wherein accepting

2   item selections comprises receiving input provided by a user via a web page.

1   13. (Original) The computer-implemented method of claim 1, wherein accepting

2 item selections comprises receiving input specifying an item purchase by a user.

1   14. (Previously presented) The computer-implemented method of claim 1,

2 further comprising, prior to determining the at least one result item, defining, in the

3 computer, the subset of the scored user logs responsive to the user log scores.

1   15. (Previously presented) The computer-implemented method of claim 1,

2 further comprising:

3   monitoring, in the computer, user behavior with respect to the selected

4   items; and

5   adjusting, in the computer, the user log responsive to the monitored user

6   behavior.

1   16. (Original) The computer-implemented method of claim 15, wherein

2 monitoring user behavior comprises at least one selected from the group consisting of:

3   detecting user input requesting that a selected item be repeated;

4   detecting user input requesting that a selected item be skipped;

5   detecting user input specifying a volume change; and

6   detecting user input specifying that a selected item be muted.

17. (Original) The computer-implemented method of claim 1, wherein accepting item selections comprises receiving input provided by a user via an application for playing tracks.

18. (Original) The computer-implemented method of claim 1, wherein accepting a query comprises receiving a user log containing identifiers for a user's item selections.

19. (Previously presented) The computer-implemented method of claim 1, wherein accepting a query comprises receiving a first search term, the method further comprising:

generating, in the computer, a second search term containing an identifier for each determined result item.

20. (Previously presented) The computer-implemented method of claim 19, further comprising at least one of:

providing, in the computer, the second search term as input for a search engine; and

adding, in the computer, the second search term to a searchable portion of a document associated with the first search term.

21. (Original) The computer-implemented method of claim 1, further comprising:

periodically uploading the generated log.

22. (Original) The computer-implemented method of claim 1, further comprising:

      outputting an advertisement relating to the determined at least one result item.

23. (Original) The computer-implemented method of claim 22, wherein outputting an advertisement comprises displaying at least one selected from the group consisting of:

      a web page;

      a banner;

      a portion of a web page; and

      an animation.

24. (Original) The computer-implemented method of claim 1, further comprising:

      outputting a notification relating to the determined at least one result item.

25. (Original) The computer-implemented method of claim 24, wherein outputting a notification comprises displaying a web page.

26. (Original) The computer-implemented method of claim 24, wherein outputting a notification comprises sending a communication to a user.

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1   27. (Original) The computer-implemented method of claim 26, wherein sending

2 a communication to a user comprises at least one selected from the group consisting of:

3   transmitting an electronic mail message to the user;

4   telephoning the user; and

5   sending a direct mail item to the user.

1   28. (Previously presented) The computer-implemented method of claim 1,

2 wherein the determined result is responsive to a significance of the occurrence of the

3 item in at least a subset of the scored user logs, and wherein the significance is

4 determined by a log likelihood ratio analysis submethod comprising:

5   determining, in the computer, a total number of user logs N;

6   determining, in the computer, a number of user logs N_1 in a subset of user

7   logs;

8   determining, in the computer, a number of user logs N_2 not in the subset

9   of user logs;

10   determining, in the computer, a number of user logs k_{11} in the subset that

11   include the item;

12   determining, in the computer, a number of user logs k_{12} not in the subset

13   that include the item;

14   determining, in the computer, a number of user logs $k_{21} = N_1 - k_{11}$ in the

15   subset that do not include the item;

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16   determining, in the computer, a number of user logs $k_{22} = N_2 - k_{12}$ not in

17   the subset that do not include the item;

18   and determining, in the computer, a log likelihood ratio for the item.

1   29. (Original) The computer-implemented method of claim 28, wherein the log

2   likelihood ratio is defined as:

3
$$\sum k_{ij} \log \frac{\pi_{ij}}{\mu_j}$$

4   where: $\pi_{ij} = \frac{k_{ij}}{N_j}, \mu_j = \sum_i \frac{k_{ij}}{N}$.

1   30. (Previously presented) The computer-implemented method of claim 29,

2   further comprising:

3   adjusting, in the computer, at least one of the k_{ij} values responsive to at

4   least one selected from the group consisting of:

5   the number of occurrences of the item in a user log;

6   the logarithm of the number of occurrences of the item in a user

7   log;

8   the number of occurrences of the item in all user logs;

9   the logarithm of the total number of users divided by the number

10   of users who have selected the item; and

11   a normalizing factor.

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1   31. (Original) The computer-implemented method of claim 30, wherein the

2   normalizing factor is $\dfrac{1}{\sqrt{\sum (S_j W_{ij})^2}}$, where S_j is a weight based on the number of

3   occurrences of the item in all user logs and W_{ij} is a weight based on the number of

4   occurrences of the item in a particular user log.

1   32. (Previously presented) The computer-implemented method of claim 1,

2   further comprising:

3   deleting, in the computer, from the determined at least one result item any

4   result items already selected by a user associated with the query.

1   33. (Previously presented) The computer-implemented method of claim 1,

2   further comprising:

3   ranking, in the computer, the at least one result item responsive to the

4   degree of significance.

1   34. (Currently amended) A computer-implemented method of discovering a

2   relationship between a first item and a second item, comprising:

3   determining, in the computer, a total number of item groups N, each item

4   group containing information detected from implicit user behavior;

5   determining, in the computer, a number of item groups N_1 in a subset of

6   item groups, the subset of item groups being defined as including

7   those item groups that contain a second item;

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8   determining, in the computer, a number of item groups N_2 not in the

9   subset of item groups;

10   determining, in the computer, a number of item groups k_{11} in the subset

11   that contain the first item;

12   determining, in the computer, a number of item groups k_{12} not in the

13   subset that contain the first item;

14   determining, in the computer, a number of item groups $k_{21} = N_1 - k_{11}$ in

15   the subset that do not contain the first item;

16   determining, in the computer, a number of item groups $k_{22} = N_2 - k_{12}$ not

17   in the subset that do not contain the first item;

18   determining, in the computer, a log likelihood ratio; and

19   generating, based on the log likelihood ratio, a representation of the

20   relationship between the first item and the second item based upon

21   implicit user behavior.

1   35. (Original) The computer-implemented method of claim 34, wherein the log

2   likelihood ratio is defined as:

3
$$\sum k_{ij} \log \frac{\pi_{ij}}{\mu_j}$$

4   where: $\pi_{ij} = \frac{k_{ij}}{N_j}, \mu_j = \sum_i \frac{k_{ij}}{N}$.

1   36. (Original) The computer-implemented method of claim 35, wherein each

2   item group comprises a document.

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1   37. (Previously presented) The computer-implemented method of claim 35,

2   further comprising:

3   adjusting, in the computer, at least one of the k_{ij} values responsive to at

4   least one selected from the group consisting of:

5   the number of occurrences of the item in a document;

6   the logarithm of the number of occurrences of the item in a

7   document;

8   the number of occurrences of the item in all documents;

9   the logarithm of the total number of documents divided by the

10   number of documents that include the item; and

11   a normalizing factor.

1   38. (Original) The computer-implemented method of claim 37, wherein the

2   normalizing factor is $\dfrac{1}{\sqrt{\sum (S_j W_{ij})^2}}$, where S_j represents the number of occurrences of

3   the item in all documents and W_{ij} represents the number of occurrences of the item in a

4   particular document.

1   39. (Currently amended) A system for discovering relationships among items,

2   comprising:

3   a user interface for accepting item selections from a plurality of users;

4   at least one log database, coupled to the user interface, for storing a log for

5   each user, each log containing identifiers for the user's item

6   selections, said log's contents being populated as a result of the

7   detection of implicit user behavior;

8   a query input device for accepting a query including at least one query

9   item identifier; and

10   a recommendation engine, coupled to the log database and to the query

11   input device, for scoring the user logs, responsive to a degree of

12   occurrence, to generate user log scores, and for determining at least

13   one result item, responsive to a degree of occurrence in at least a

14   subset of the scored user logs, the user log scores being based

15   exclusively on the detected implicit user behavior.

1   40. (Original) The system of claim 39, wherein the significance of the occurrence

2 is determined by a log likelihood ratio analysis and the recommendation engine

3 determines the at least one result item responsive to the determined significance.

1   41. (Original) The system of claim 39, wherein the significance of the occurrence

2 is determined by a substantial equivalent of a log likelihood ratio analysis and wherein

3 the recommendation engine determines the at least one result item responsive to the

4 determined significance.

1   42. (Original) The system of claim 39, wherein each item is a video track and

2 wherein the user interface accepts item selections by determining which tracks are

3 selected for playback.

1   43. (Original) The system of claim 39, wherein the user interface accepts item

2 selections by determining which tracks are selected for purchase.

1   44. (Original) The system of claim 39, wherein each item is a music track and

2 wherein the user interface accepts item selections by determining which tracks are

3 selected for playback.

1   45. (Original) The system of claim 44, wherein the user interface comprises an

2 online jukebox.

1   46. (Original) The system of claim 45, wherein the online jukebox monitors user

2 behavior with respect to the selected items and adjusts the user log scores responsive to

3 the monitored user behavior.

1   47. (Original) The system of claim 46, wherein the online jukebox monitors user

2 behavior by detecting at least one selected from the group consisting of:

3   user input requesting that a selected item be repeated; and

4   user input requesting that a selected item be skipped; and

5   user input specifying a volume change; and

6   user input specifying that a selected item be muted.

1   48. (Original) The system of claim 47, further comprising:

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2   a track list generator, coupled to the recommendation engine, for

3   generating a track list containing an identifier for each determined

4   result item comprising a music track.

1   49. (Original) The system of claim 44, further comprising:

2   a music player, coupled to the track list generator, for playing the music

3   tracks specified by the generated track list.

1   50. (Original) The system of claim 44, further comprising:

2   a format scheduler, for accepting a format schedule specifying music track

3   categories for time periods; and

4   a track list generator, coupled to the recommendation engine and to the

5   format scheduler, for generating a track list conforming to the

6   format schedule and containing an identifier for each determined

7   result item comprising a music track.

1   51. (Original) The system of claim 39, wherein the query input device receives a

2   user log containing identifiers for a user's item selections.

1   52. (Original) The system of claim 39, wherein the query input device receives a

2   first search term, the system further comprising:

3   a search term generator, coupled to the recommendation engine, for

4   generating a second search term containing an identifier for each

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5   determined result item and for providing the second search term as

6   input for a search engine.

1   53. (Original) The system of claim 39, wherein the query input device receives a

2 first search term, the system further comprising:

3   a search term generator, coupled to the recommendation engine, for

4   generating a second search term containing an identifier for each

5   determined result item and for providing the second search term to

6   be added to a searchable portion of a document associated with the

7   first search term.

1   54. (Original) The system of claim 39, further comprising:

2   an advertisement output device, coupled to the recommendation engine,

3   for outputting an advertisement relating to the determined at least

4   one result item.

1   55. (Original) The system of claim 54, wherein the advertisement output device

2 displays at least one selected from the group consisting of:

3   a web page;

4   a banner;

5   a portion of a web page; and

6   an animation.

1   56. (Original) The system of claim 39, further comprising:

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2   a notification output, coupled to the recommendation engine, for

3   outputting a notification relating to the determined at least one

4   result item.

1   57. (Original) The system of claim 56, wherein the notification output device

2 displays at least one selected from the group consisting of:

3   a web page;

4   a banner;

5   a portion of a web page; and

6   an animation.

1   58. (Original) The system of claim 56, wherein the notification output device

2 sends a communication to a user.

1   59. (Currently Amended) A computer-readable medium comprising computer-

2 readable code for discovering relationships between items, comprising:

3   computer-readable code adapted to accept item selections detected from a

4   plurality of users, the item selection detections being based upon

5   the detection of implicit user behavior;

6   computer-readable code adapted to generate a log for each user, each log

7   containing identifiers for the user's item selections, each of the user

8   logs being populated as a result of the acceptance of the detected

9   item selections;

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10   computer-readable code adapted to accept a query including at least one

11   query item identifier;

12   computer-readable code adapted to score the user logs, <u>the scoring being</u>

13   <u>responsive</u> to a degree of occurrence of the at least one query item

14   identifier in the user logs, <u>so as</u> to generate user log scores <u>based</u>

15   <u>exclusively on the detected implicit user behavior</u>; and

16   computer-readable code adapted to determine at least one result item,

17   responsive to a degree of occurrence in at least a subset of the

18   scored user logs.

1   60. (Original) The computer-readable medium of claim 59, wherein a

2   significance of the occurrence is determined by a log likelihood ratio analysis and the

3   determined result is responsive to the determined significance.

1   61. (Original) The computer-readable medium of claim 59, wherein a

2   significance of the occurrence is determined by a substantial equivalent of a log

3   likelihood ratio analysis and the determined result is responsive to the determined

4   significance.

1   62. (Original) The computer-readable medium of claim 59, wherein each item is

2   a video track and wherein the computer-readable code adapted to accept item selections

3   comprises computer-readable code adapted to determine which tracks are selected for

4   playback.

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1   63. (Original) The computer-readable medium of claim 59, wherein each item is

2   a music track and wherein the computer-readable code adapted to accept item

3   selections comprises computer-readable code adapted to determine which tracks are

4   selected for playback.

1   64. (Original) The computer-readable medium of claim 63, further comprising:

2   computer-readable code adapted to generate a track list containing an

3   identifier for each determined result item comprising a music track.

1   65. (Original) The computer-readable medium of claim 64, further comprising:

2   computer-readable code adapted to delete from the track list at least one

3   identifier corresponding to a music track already selected by the

4   user.

1   66. (Original) The computer-readable medium of claim 64, further comprising:

2   computer-readable code adapted to play the music tracks specified by the

3   generated track list.

1   67. (Original) The computer-readable medium of claim 63, further comprising:

2   computer-readable code adapted to accept a format schedule specifying

3   music track categories for time periods; and

4   computer-readable code adapted to generate a track list conforming to the

5   format schedule and containing an identifier for each determined

6   result item comprising a music track.

1   68. (Original) The computer-readable medium of claim 63, wherein the

2 computer-readable code adapted to score the user logs comprises computer-readable

3 code adapted to determine a degree of occurrence in each user log of at least one music

4 track identified by the query item identifier.

1   69. (Original) The computer-readable medium of claim 63, wherein the

2 computer-readable code adapted to score the user logs comprises computer-readable

3 code adapted to determine a degree of occurrence in each user log of at least one music

4 track associated with an artist identified by the query item identifier.

1   70. (Original) The computer-readable medium of claim 59, wherein the

2 computer-readable code adapted to accept item selections comprises computer-readable

3 code adapted to receive input provided by a user via a web page.

1   71. (Original) The computer-readable medium of claim 59, wherein the

2 computer-readable code adapted to accept item selections comprises computer-readable

3 code adapted to receive input specifying an item purchase by a user.

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1   72. (Original) The computer-readable medium of claim 59, further comprising,

2   computer-readable code adapted to, prior to determine the at least one result item,

3   define the subset of the scored user logs responsive to the user log scores.

1   73. (Original) The computer-readable medium of claim 59, further comprising:

2   computer-readable code adapted to monitor user behavior with respect to

3   the selected items; and

4   computer-readable code adapted to adjust the user log scores responsive

5   to the monitored user behavior.

1   74. (Original) The computer-readable medium of claim 73, wherein the

2   computer-readable code adapted to monitor user behavior comprises at least one

3   selected from the group consisting of:

4   computer-readable code adapted to detect user input requesting that a

5   selected item be repeated;

6   computer-readable code adapted to detect user input requesting that a

7   selected item be skipped;

8   computer-readable code adapted to detect user input specifying a volume

9   change; and

10   computer-readable code adapted to detect user input specifying that a

11   selected item be muted.

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1   75. (Original) The computer-readable medium of claim 59, wherein the

2   computer-readable code adapted to accept item selections comprises computer-readable

3   code adapted to receive input provided by a user via an application for playing tracks.

1   76. (Original) The computer-readable medium of claim 59, wherein the

2   computer-readable code adapted to accept a query comprises computer-readable code

3   adapted to receive a user log containing identifiers for a user's item selections.

1   77. (Original) The computer-readable medium of claim 59, wherein the

2   computer-readable code adapted to accept a query comprises computer-readable code

3   adapted to receive a first search term, the computer-readable medium further

4   comprising:

5   computer-readable code adapted to generate a second search term

6   containing an identifier for each determined result item.

1   78. (Original) The computer-readable medium of claim 77, further comprising at

2   least one of:

3   computer-readable code adapted to provide the second search term as

4   input for a search engine; and

5   computer-readable code adapted to add the second search term to a

6   searchable portion of a document associated with the first search

7   term.

1   79. (Original) The computer-readable medium of claim 59, further comprising:

2   computer-readable code adapted to periodically upload the generated log.

1   80. (Original) The computer-readable medium of claim 59, further comprising:

2   computer-readable code adapted to output an advertisement relating to

3   the determined at least one result item.

1   81. (Original) The computer-readable medium of claim 80, wherein the

2 computer-readable code adapted to output an advertisement comprises computer-

3 readable code adapted to display at least one selected from the group consisting of:

4   a web page;

5   a banner;

6   a portion of a web page; and

7   an animation.

1   82. (Original) The computer-readable medium of claim 59, further comprising:

2   computer-readable code adapted to output a notification relating to the

3   determined at least one result item.

1   83. (Original) The computer-readable medium of claim 82, wherein the

2 computer-readable code adapted to output a notification comprises computer-readable

3 code adapted to display a web page.

1 84. (Original) The computer-readable medium of claim 82, wherein the

2 computer-readable code adapted to output a notification comprises computer-readable

3 code adapted to send a communication to a user.

1 85. (Original) The computer-readable medium of claim 84, wherein the

2 computer-readable code adapted to send a communication to a user comprises at least

3 one selected from the group consisting of:

4 computer-readable code adapted to transmit an electronic mail message to

5 the user;

6 computer-readable code adapted to telephone the user; and

7 computer-readable code adapted to send a direct mail item to the user.

1 86. (Previously presented) The computer-readable medium of claim 59, wherein

2 the determined result is responsive to a significance of the occurrence of the item in at

3 least a subset of the scored user logs, and wherein the computer-readable code adapted

4 to determine a determined at least one result item comprises computer-readable code

5 adapted to determine the result by a log likelihood ratio analysis submethod.

1 87. (Original) The computer-readable medium of claim 86, wherein the

2 computer-readable code adapted to determine the result by a log likelihood ratio

3 analysis submethod comprises:

4 computer-readable code adapted to determine a total number of users N;

5   computer-readable code adapted to determine a number of users N_1 in a

6   subset of users;

7   computer-readable code adapted to determine a number of users N_2 not in

8   the subset of users;

9   computer-readable code adapted to determine a number of users k_{11} in the

10   subset that selected the item;

11   computer-readable code adapted to determine a number of users k_{12} not

12   in the subset that selected the item;

13   computer-readable code adapted to determine a number of users $k_{21} = N_1$

14   - k_{11} in the subset that did not select the item;

15   computer-readable code adapted to determine a number of users $k_{22} = N_2$

16   - k_{12} not in the subset that did not select the item; and

17   computer-readable code adapted to determine a log likelihood ratio for

18   the item.

1   88. (Original) The computer-readable medium of claim 87, wherein the log

2 likelihood ratio is defined as:

3      $$\sum k_{ij} \log \frac{\pi_{ij}}{\mu_j}$$

4   where: $\pi_{ij} = \frac{k_{ij}}{N_j}, \mu_j = \sum_i \frac{k_{ij}}{N}$.

1   89. (Previously presented) The computer-readable medium of claim 86, wherein

2   the computer-readable code adapted to determine the result by a log likelihood ratio

3   analysis submethod further comprises:

4   computer-readable code adapted to adjust at least one of the n_{ij} values

5   responsive to at least one selected from the group consisting of:

6   the number of occurrences of the item in a user log;

7   the logarithm of the number of occurrences of the item in a user log;

8   the number of occurrences of the item in all user logs;

9   the logarithm of the total number of users divided by the number of users

10   who have selected the item; and

11   a normalizing factor.

1   90. (Original) The computer-readable medium of claim 89, wherein the

2   normalizing factor is $\dfrac{1}{\sqrt{\sum (S_j W_{ij})^2}}$, where S_j is a weight based on the number of

3   occurrences of the item in all user logs and W_{ij} is a weight based on the number of

4   occurrences of the item in a particular user log.

1   91. (Original) The computer-readable medium of claim 59, further comprising:

2   computer-readable code adapted to delete from the determined at least

3   one result item any result items already selected by a user

4   associated with the query.

1   92. (Original) The computer-readable medium of claim 59, further comprising:

2   computer-readable code adapted to rank the at least one result item

3   responsive to the degree of significance.

1   93. (Currently Amended) A computer-readable medium comprising computer-

2 readable code for discovering a relationship between a first item and a second item,

3 comprising:

4   computer-readable code adapted to determine, in a computer, a total

5   number of item groups N, each item group containing information

6   detected from implicit user behavior;

7   computer-readable code adapted to determine, in the computer, a number

8   of item groups N_1 in a subset of item groups, the subset of item

9   groups being defined as including those item groups that contain a

10   second item;

11   computer-readable code adapted to determine, in the computer, a number

12   of item groups N_2 not in the subset of item groups;

13   computer-readable code adapted to determine, in the computer, a number

14   of item groups k_{11} in the subset that contain the first item;

15   computer-readable code adapted to determine, in the computer, a number

16   of item groups k_{12} not in the subset that contain the first item;

17   computer-readable code adapted to determine, in the computer, a number

18   of item groups $k_{21} = N_1 - k_{11}$ in the subset that do not contain the

19   first item;

20   computer-readable code adapted to determine, in the computer, a number

21   of item groups $k_{22} = N_2 - k_{12}$ not in the subset that do not contain

22   the first item;

23   computer-readable code adapted to determine, in the computer, a log

24   likelihood ratio; and

25   computer-readable code adapted to generate, based on the log likelihood

26   ratio, a representation of the relationship between the first item and

27   the second item <u>based upon implicit user behavior</u>.

1   94. (Original) The computer-readable medium of claim 93, wherein the log

2 likelihood ratio is defined as:

3    $$\sum k_{ij} \log \frac{\pi_{ij}}{\mu_j}$$

4   where: $\pi_{ij} = \frac{k_{ij}}{N_j}, \mu_j = \sum_i \frac{k_{ij}}{N}$.

1   95. (Original) The computer-readable medium of claim 93, wherein each item

2 group comprises a document.

1   96. (Previously presented) The computer-readable medium of claim 93, further

2 comprising:

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3   computer-readable code adapted to adjust, in the computer, at least one of

4   the k_{ij} values responsive to at least one selected from the group

5   consisting of:

6   the number of occurrences of the item in a document;

7   the logarithm of the number of occurrences of the item in a

8   document;

9   the number of occurrences of the item in all documents;

10   the logarithm of the total number of documents divided by the

11   number of documents that include the item; and

12   a normalizing factor.

1   97. (Original) The computer-readable medium of claim 96, wherein the

2   normalizing factor is $\dfrac{1}{\sqrt{\sum (S_j W_{ij})^2}}$, where S_j represents the number of occurrences of

3   the item in all documents and W_{ij} represents the number of occurrences of the item in a

4   particular document.